

CASE REPORT – USE OF *XIAO YAO SAN* FOR THE TREATMENT OF INFLAMMATORY BOWEL COMPLAINTS IN A JUVENILE DOMESTIC SHORT HAIR FELINE.

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ABSTRACT:

A juvenile feline was presented with Inflammatory Bowel Disease. The symptoms included loose bowel motions, faecal urgency, and intermittent episodes of constipation, pain and vomiting. Conventional medicine eased the bouts of constipation but had limited or no lasting effect on the loose bowel motions. Herbal treatment *Xiao Yao San* based on Traditional Chinese Medicine (TCM) theories was used to manage these symptoms.

SIGNALMENT:

Ellie, a 9 ½ month old, female neutered Domestic Medium Hair feline was presented on 21/12/07 in thin body condition with a dull coat.

DIAGNOSIS:

Ellie was purchased at 6 months of age from the RSPCA on 14/09/07 along with a second kitten. She arrived with loose stools and frequently toileting outside the litter tray. All vaccinations (6/8/07 and 6/9/07) and neutering were during her stay at the RSPCA. She was also wormed and received an antibiotic amoxicillin course in September to rule out parasitism and bacterial overgrowth. On the 13/11/07 Ellie had her first bowel impaction (X-ray pictures 1-2) with pain, vomiting and unsuccessful straining. She was given 3mls of liquid paraffin four times over five hours. This passed the faeces but her bowel motions returned to varying states within a week. On the 17/12/07 she had a second bowel impaction (X-ray pictures 3-4) and was given an enema under sedation. Once more this passed her impaction but her stools returned again to varying states.

Ellie's stools ranged from thin (0.5cm diameter) with either hard, plasticine or looser consistency, to thicker, long (15cm) stools after the paraffin treatment. There was always some degree of urgency, with one episode of defecating small amounts four times in fifteen minutes on the carpet.

All X-rays (Pictures 1-4) from her constipation episodes show a distended abdomen with impaction material in the large intestine and lower small intestine. Bony material but no

foreign body was present. X-rays 1-2 from her first bout displays a gaseous stomach and upper small intestine tract, while X-rays 3-4 from her second episode shows distended gas loops of the small intestine and large intestine.

Her diet consisted of rabbit, chicken, turkey, quail, red meats, organ meats, vegetables, fruit, and wild rice, with an 80:20 ratio of meat to vegetable/fruit/rice. She would eat slowly and daintily, and would come back frequently to the food bowl.

Although there did not appear to be a time, temperature or weather aggravation to her symptoms she did like to lie and gather heat from paving stones. She also could get hot quickly and soon move away.

Her constitution is an Earth type. She is gentle, happy go lucky, doesn't mind an occasional friendly bat in the face, plays well with her new household, loves licking and grooming her owners or herself. She does get stressed when the second kitten aggressively attacks her or being shut in a room, this subsequently aggravated her symptoms.

On presentation Ellie's demeanor was bright and lively. Although she happily explored the consult room she continued to pace and did not rest. On physical examination Ellie's body weight was a little thin. The coat was fine, fluffy and lacking luster. Abdomen palpation revealed a distended abdomen with a fluid consistency, and generally uncomfortable to palpate. Ellie's pulse was weak, taunt and thin, with her tongue being lavender colour, flabby and wet. Many of her Alarm Points seemed tender around the abdomen but these were difficult to isolate from the abdominal discomfort. The Associated Effect Point BL18 was sensitive and no smells were detected.

Ellie's Western diagnosis of Inflammatory Bowel Disease was based on the ruling out of other diseases such as parasitism and bacterial overgrowth with conventional medicine. A TCM diagnosis was based on her history, X-rays and physical presentation symptoms listed in Table 1. This is Spleen Qi deficiency, Liver Blood deficiency, Liver Qi stagnation, and Damp Heat.

Spleen Qi deficiency is indicated by her loose and thin stools, urgency to defecate with slightly loose stools, slow dainty eating, seeking warmth to warm her cooking pot, thin body weight, a weak pulse, and a wet flabby tongue. Liver Blood Deficiency shows up in the signs of Ellie's dull coat, anxiousness in some situations, thin body weight, and a weak thin pulse. Liver Qi Stagnation addresses Ellie's harder stools, constipation with abdominal pain, vomiting, straining to defecate, gaseous intestines, moving away from a prolonged heat source, pacing in the consult room, abdominal distension, sensitive BL18 acupuncture point, a taunt pulse, and lavender tongue. Damp Heat is a differential to many of her symptoms. Heat symptoms such as moving away from a prolonged heat source and pacing can be accounted for by the other TCM diagnoses. Overall she was not a considerably Damp case, with only urgency to defecate looser stools and a flabby wet tongue, as main features of her Damp Heat.

TREATMENT:

The Chinese herb formula, *Xiao Yao San* or Rambling Ease Powder, is indicated in digestive disorders that have a pattern of Liver Blood deficiency, Spleen Qi deficiency, and Liver Qi stagnation as with this situation (Marsden, 2007). Dampness or Damp Heat only plays a minor part of this case and is not a prominent prescribing factor with this formula. However three out of the seven herbs used, White Atractylodes (*Bai Zhu*), Poria (*Fu Ling*), and Licorice (*Gan Cao*) are used in *Xiao Yao San* to drain and dry Damp from the Spleen and Stomach (Marsden, 2007). Licorice (*Gan Cao*) is also utilized for detoxifying, relieving heat, softening the Liver and relaxing spasms and pains (Sunten, 2006). Bupleurum (*Chai Hu*) is added to move stagnant Qi, Angelica sinensis (*Dang Gui*) and White Peony (*Bai Shao Yao*) are incorporated to move and tonify Liver Blood and Yin, while Peppermint (*Bo He*) clears Heat that has accumulated in the Liver channel from long standing stasis (Marsden, 2007). Ginger (*Sheng Jiang*) is listed in *Xiao Yao San* formulas (Ehling & Swart, 2002 & Sunten, 2006) although it was not included in the Natural Path range used for this case.

Xiao Yao San was introduced in early January 2008. The dose was slowly increased to 1/8th teaspoon twice daily and continued for 13 weeks until the 2nd follow up consultation. With general improvement in the clinical picture, the dose was then reduced to 1/8th teaspoon once daily.

Dietary modifications were also introduced. This was an adjustment of the meat and vegetable ratio to 90-95%:5-10%, and eliminated the fruit and grain to suit a carnivorous digestion system.

RESULTS:

Follow up consultation on 23/2/08 found Ellie was nearly always producing formed stools since introducing the herbs. Only occasional loose stools were reported but not to the same severity as previous. She was always using the litter tray and had no more constipation episodes. Her coat had become glossy and her abdomen distension was reduced with no pain present. On 5/4/08 it was reported that she was always producing normal bowel motions. She had also grown well and was very playful. On physical examination her tongue was pinker and dryer, her pulse was also stronger but remained thin and taunt.

Xiao Yao San will be continued at 1/8th teaspoon once daily and slowly weaned over the next few months providing her symptoms do not return.

DISCUSSION:

A healthy body is a balance of Yin and Yang. Environmental, internal, and lifestyle factors including diet can affect the fine adjustment of the bodies balance which allows susceptibility to disease. Unfortunately Ellie arrived at the new household with her current condition so it could not be identified where the issue started from. However,

Spleen Qi deficiency often arises due to an inadequate diet (Maciocia, 1989). Coming from the RSPCA it is likely she was fed commercial foods high in carbohydrates and grains which are not best suited to a carnivorous diet.

The disease process can become self-perpetuating. A weakened Spleen fails to produce fundamental substances such as Blood and produces pathological substances instead, known as Dampness (Marsden, 2007). As movement in the middle burner is overseen by the Liver, a decrease in Liver Blood gives rise to stasis in the middle burner classified as Liver Qi stagnation. Stagnation of Liver Qi then impairs the movement of the fundamental substances from the Spleen, including the Blood (Marsden, 2007). Liver Blood deficiency also drains Qi, and thus the progression of disease continues. The weakened Spleen, Liver Blood deficiency and Liver Qi stagnation can account for nearly all of Ellie's symptoms listed in Table 1.

The Dampness arising from the weakened Spleen can also lead to a self-perpetuating cycle. Damp can accumulate in organs such as the lining of intestines and obstruct the flow of Qi and Blood. The Yang energy that impels Blood becomes passively released as friction Heat, becoming Damp Heat (Marsden, 2007). Heat then damages Blood flowing through the tissues and again the cycle is continued. In this case the Dampness and Heat was not deeply entrenched.

Xiao Yan San, employed in this case, was first recorded in the *Tai Ping Hui Min He Ji Ju Fang* [Formularies of the Bureau of People's Welfare Pharmacies], Volume 3 by Chen, Shiwen, during the Song dynasty A.D. 1151 (Hou & Jin, 2005). It is a successful herb combination used to soothe the Liver, relieve depressed Liver Qi and Spleen Qi, invigorate the Spleen and nourish Blood (Hou & Jin, 2005). Chen et al (2005) showed in a trial of 41 cases of Liver Qi Stagnation and Spleen Deficiency Syndrome (LSSDS) that there was a decline in epinephrine, dopamine and increase in beta-endorphin where *Xiao Yao San* was used, and thus aids regulation of the nervous and endocrine systems and contributes to the improvement of the clinical status of patients with LSSDS. The individual herbs of *Xiao Yao San* have also been studied in their clinical uses.

Bupleurum (*Chai Hu*) is used in this formula to move stagnant Qi (Hou & Jin, 2005). The roots and fruits of which contain saikosaponins as the main component (Hou & Jin, 2005). Saikosaponins can have an anti-inflammatory effect by generating cyclooxygenase and lipoxygenase metabolites and inhibiting arachidonic acid metabolism (Bernejo et al, 1998). They can also show enhanced interleukin-1 production which increases antibody response and activating some macrophage functions (Ushio et al, 1991). The pectic polysaccharide content can aid intestinal homeostasis by increasing cytokine secretion for the interface between the antigen rich lumen and lymphocyte rich lamina propria (Matsumoto et al, 2008). The reduced inflammation, enhanced immune response and regulated digestive system could play a part in Bupleurum moving stagnant Qi.

Angelica sinensis (*Dang Gui*) moves and tonifies Liver Blood and Yin (Marsden, 2007). Many studies including Hui et al (2006) and Ye et al (2001) show polysaccharides from Angelica sinensis to have a direct effect on mucosal healing on gastric epithelial cells.

Hui et al (2006) also demonstrated an increased turnover in haemopoietic stem cells which would attribute to the nourishment of Liver Blood and Yin.

White Peony (*Bai Shao Yao*) is also used in the formula to move and tonify Liver Blood and Yin (Marsden, 2007). Wang and Ma (1990) showed Peony to inhibit thrombosis and platelet aggregation, increase fibrinolytic activity and promote thrombolysis, all of which could contribute to White Peony's action of promoting Blood circulation. Gallotannin, an extract of White Peony, has also been shown to relax prostaglandin F2a-precontracted aortic ring preparations with endothelium (Gotto et al, 1996) which would also allow increased Blood circulation.

Peppermint (*Bo He*) clears Heat that has accumulated in the Liver channel from long standing stasis (Marsden, 2007). Peppermint has been well documented for bowel inflammatory conditions, with many investigations into the mechanism for this with anti-bacterial, anti-spasmodic, and anti-foaming properties. Iscan et al (2002) proposes menthone as the bioactivity to have an antimicrobial action. Logan & Beaulne (2002) supports this theory that Inflammatory Bowel symptoms are vastly improved by the antimicrobial activity on the bacterial overgrowth of the small intestine. Grigoleit (2005) attributes the antispasmodic effect on the gastrointestinal tract due to the interference of the menthol component of Peppermint with the movement of calcium across the cell membrane in the smooth musculature, and the antifoaming effects of Peppermint oil may play an additional role in medicinal use.

White Atractylodes (*Bai Zhu*) drains and dries Damp from the Spleen and Stomach while supporting Spleen and Lung Qi (Marsden, 2007). Nakai et al (2003) contributes the polyacteylenic compounds present in White Atractylodes to regulate gastric emptying. This would help enhance the Spleen and Stomach's digestive functions.

Poria (*Fu Ling*) is another herb used for draining and drying Damp from the Spleen and Stomach while supporting Spleen and Lung Qi (Marsden, 2007). Again derivatives, in this case a triterpene acid, have been linked to reduce inflammation in mice (Yasukawa et al, 1998) and Tai et al (1995) has shown triterpenes to have an anti-emetic activity in frogs.

Licorice (*Gan Cao*) replenishes Spleen and Stomach Qi, detoxifies and relieves heat, softens the Liver and relaxes spasms and pains (Sunten, 2006). The direct benefits of Licorice on the digestive system have been shown by Dehpour et al (1994) in protection and reduction of gastric ulcers, and Sato et al (2007) in relaxation in the lower part of the intestine by transformation from its glycosides. Shin et al (2007) suggests that the anti-allergic effects of licorice are mainly due to glycyrrhizin, 18beta-glycyrrhetic acid, and liquiritigenin, which can relieve IgE-induced allergic diseases, possibly contributing to Licorices detoxifying benefits.

The enrichment in Ellie's wellbeing clearly started with introducing these herbs. With these studies it can be seen how the herbs of *Xiao Yao San* can simultaneously reduce inflammation, enhance the immune response, regulate and promote healing of the

digestive system, regulate the nervous and endocrine systems, as well as increase turnover in haemopoietic stem cells and aid blood circulation, all of which could benefit Inflammatory Bowel Disease patients.

CONCLUSION:

In Western medicine a diagnosis focuses on a specific pathological state, where in TCM a diagnosis is based on a pattern of clinical signs. Not two individuals always show the same clinical signs of the pathological state. Therefore several TCM patterns could fit one Western diagnosis. Providing the TCM pattern fits, *Xiao Yao San* can be used for other cases of Inflammatory Bowel Disease and achieve a similar successful outcome.

TABLES: Table 1; TCM symptom differential diagnoses

History, X-ray or Physical Examination Findings.	TCM differential diagnoses (Marsden, 2007) (Maciocia, 1989)
Stools - Thin	Spleen Qi deficiency
Stools - Loose or Plasticine	Spleen Qi deficiency
Stools - Hard	Liver Qi Stagnation Heat or Yin deficiency
Alternating constipation and loose stools	Liver Qi invading Spleen
Urgency to defecate loose stools	Damp Heat
Can not hold in slightly loose stools	Stomach or Spleen Qi deficiency Sinking Spleen Qi
Impaction with abdominal pain	Liver Qi stagnation Cold invasion
Distended abdomen	Liver Qi stagnation
Vomiting	Liver Qi stagnation Triple Heater obstruction Rebellious Stomach Qi
Straining to defecate	Liver Qi stagnation Qi or Yang deficiency
X-rays - Gaseous intestines	Liver Qi invading Spleen
Appetite - Slow and dainty	Spleen Qi deficiency
Seeking warmth	Spleen Qi deficiency Cold pattern
Moving away from prolonged heat source	Liver Qi stagnation Heat pattern
Anxiety in some situations	Liver Blood deficiency Kidney deficiency
Pacing	Liver Qi stagnation Heat pattern
Thin body condition	Spleen Qi deficiency Liver Blood deficiency
Dull coat	Liver Blood deficiency

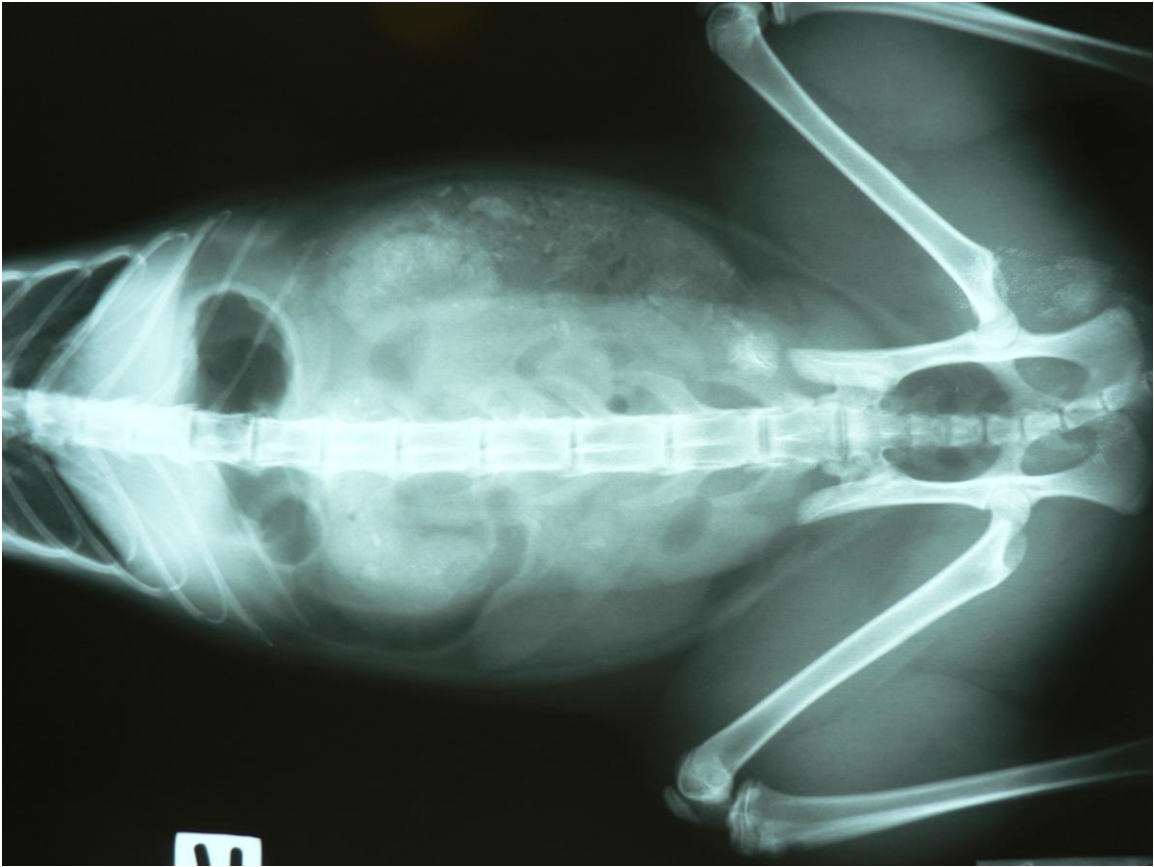
Pulse - Weak	Spleen Qi deficiency Liver Blood deficiency
Pulse - Taunt	Liver Qi stagnation Blood stasis
Pulse - Thin	Liver Blood deficiency Yin deficiency
Tongue - Lavender	Liver Qi stagnation Blood stasis
Tongue - Flabby	Spleen Qi deficiency Dampness
Tongue - Wet	Spleen Qi deficiency Dampness
AEP – BL18	Liver pattern

PICTURES:

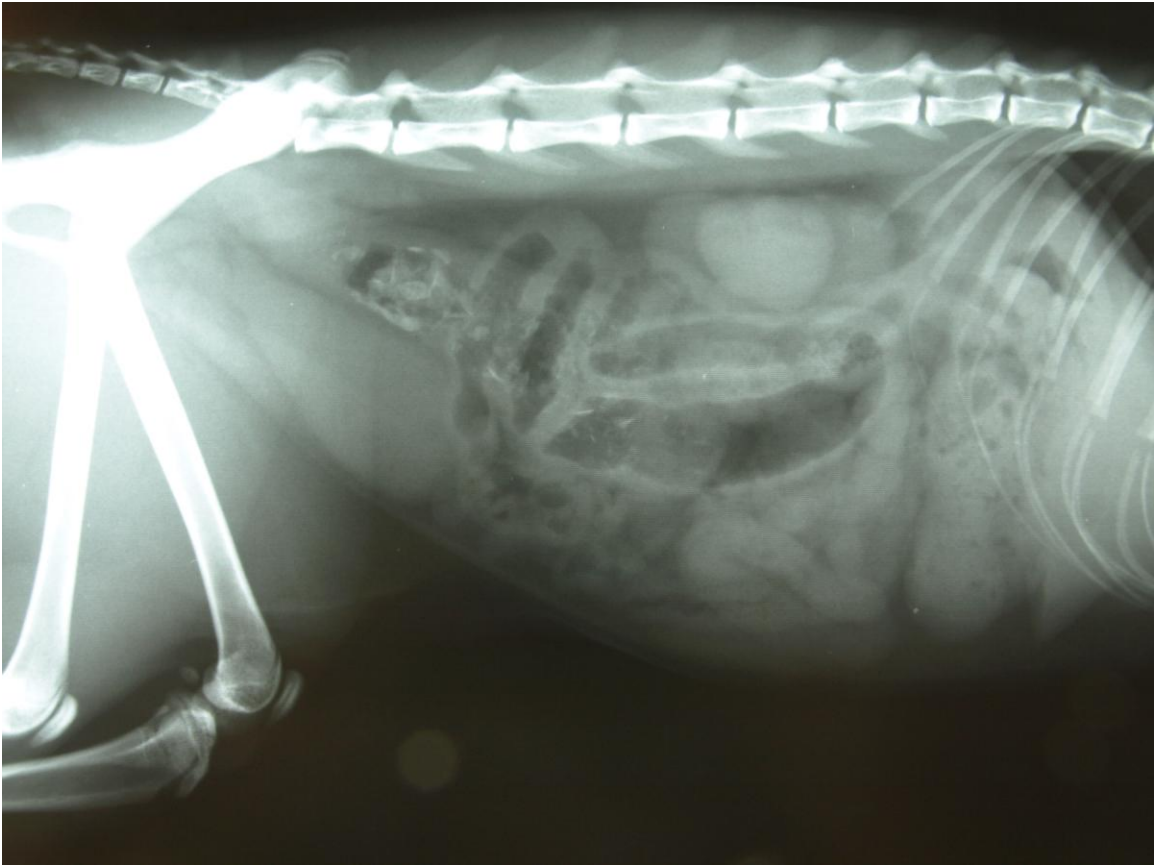
Picture 1; Lateral abdomen 13/11/07



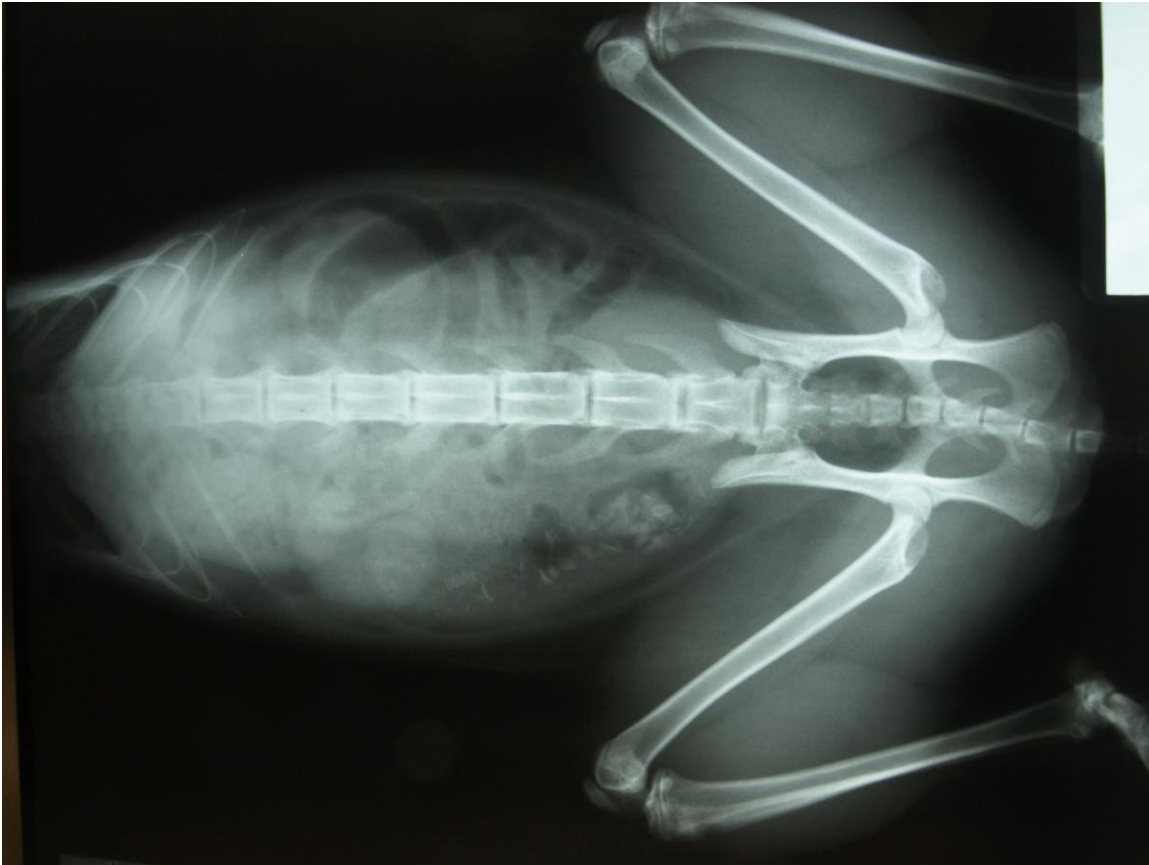
Picture 2; VD abdomen 13/11/07



Picture 3; Lateral abdomen 17/12/07



Picture 4; VD abdomen 17/12/07



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